SECTION M7

PAINTS AND PROTECTIVE COATINGS

M7.00.0 General Requirements for Paints and Protective Coatings.

A. General.

All paint shall conform to the following general requirements.

1. Materials.

The raw materials used in the following specifications for paints and protective coatings shall conform to the specification designed by ASTM, Federal serial number or AASHTO unless specified otherwise in the individual specification. Subsequent amendments to the specifications quoted shall apply to all raw materials and finished products. No "or equal" substitution for any specified material shall be made without written consent of the Engineer.

2. Proportions.

Paint proportions and percentages given in the following specification are expressed by mass unless stated otherwise.

3. Condition in the Container.

Paint and protective coatings shall be homogenous, free of contaminant and of a consistency suitable for use in the capacity for which it is specified. The finished product shall be well ground and the pigment shall be properly dispersed and suspended in the vehicle according to the requirements of the paint or protective coating. The dispersion shall be of such nature that the pigment does not settle badly, does not cake or thicken in the container, and does not become granular, jelled or curdled. Any settlement of pigment in the paint or protective coating shall be a thoroughly wetted soft mushy mass permitting the complete and easy vertical penetration of a paddle. Settled pigment shall be easily dispersed, with a minimum resistance to the sidewise manual motion of the paddle across the bottom of the container, to form a smooth uniform product of the proper consistency. The manufacturer shall include in the paint the necessary additives for control of sagging, pigment settling, leveling, and other qualities of a satisfactory working material. The paint shall possess satisfactory properties in all respects which affect its application and curing.

4. Packaging.

The finished paint or protective coating shall be furnished in new 20 liter, round, non-tapered containers no thinner than 0.60 millimeter unless otherwise specified. The containers shall have the lug type crimp lids with ring seals and be equipped with ears and bails. The containers shall meet U.S. Department of Transportation Hazardous Materials Shipping Regulations. The container must be lined if necessary so as to prevent attack by the paint. The lining must not come off the can as skins.

The following information shall be labeled on each can in a clear legible manner:

a) Name of Manufacturer
b) Place of Manufacture
c) Manufacturer's Batch Number
d) MHD Specification Number
e) Date of Manufacture

Precautions concerning the handling and the application of the paint or protective coating shall be shown on the label.

B. Sampling and Testing.

1. Sampling.

At least one sample, not less than one liter, shall be taken for each batch or less of each kind of paint to be used. Samples must be taken in clean, dry, airtight, widemouth metal cans and the sample must fill the can to within 25 millimeters from the top. Each sample forwarded to the Research and Materials Section shall be accompanied by the name of the manufacturer, the batch number, the specification number and the quantity of paint represented.

Before the Contractor will be permitted to use any paint, the material proposed to be used shall have been sampled, tested and approved.

The manufacturer, as may be required by the Engineer, shall permit access to an inspection of his/her paint and all operations involved in the manufacture of these materials, shall permit sampling of raw materials and shall furnish such reasonable facilities as the Engineer may require for such inspection.

2. Testing.

Testing of paints will be done at the Research and Materials Section in accordance with the latest methods of Federal Test Method Standard Number 141, ASTM and Methods in use by the Research and Materials Section.

In addition the Department reserves the right to make use of any information or methods of testing to determine the quality of paint and paint materials.

The manufacturer may obtain dry color chips from the Research and Materials Section in order to obtain the proper sample color if he/she so desires or he/she may submit a wet sample of the paint which he/she proposes to furnish. If the color of the wet sample is approved, paints matching the wet sample will, as regards to color, be accepted.

The Contractor shall assume all costs arising from the use of patented materials, equipment, devices or processes used or incorporated in the work and agrees to indemnify and save harmless the Commonwealth of Massachusetts and its duly authorized representative from all suits at law or action of every nature for or on account of the use of any patented materials, equipment, device or processes.

A listing of the paints is below. Any copies of individual specifications or a complete set of the specifications may be obtained from the Research and Materials Section, 400 D Street, South Boston, Massachusetts 02210-1953.

M7.01 Pavement Markings.

M7.01.03	White Thermoplastic Reflectorized Pavement Markings
M7.01.04	Yellow Thermoplastic Reflectorized Pavement Markings
M7.01.07	Glass Beads
M7.01.14	Black Non-Reflective Lane Tape
M7.01.16	White and Yellow Temporary Reflective Lane Tape
M7.01.18	Preformed Permanent Plastic Pavement Markings or Legends
M7.01.20	Thermoplastic Pavement Marking Compound, Alkyd
M7.01.21	Green Pavement Coatings
M7.01.23	Fast Drying White Water-Borne Traffic Paint
M7.01.24	Fast Drying Yellow Water-Borne Traffic Paint

M7.02 Structural Paint.

M7.02.20	Zinc Rich Primer, Organic Vehicle Type
M7.02.21	Inorganic Zinc Rich Primer
M7.02.61	Epoxy Ester Based Zinc Rich Primer

M7.03 Enamels.

M7.03.02	Sign and Equipment Enamel

M7.04 Miscellaneous Coatings.

M7.04.01	Coal Tar Protective Coatings
M7.04.02	Primer, Paint, Exterior (Undercoat for Wood, Ready Mixed White and Tints)
M7.04.04	Paint, Ready Mixed, International Orange
M7.04.05	Paint, Exterior, Black Ready Mixed
M7.04.07	Primer Coating, Zinc Dust-Zinc Oxide (for galvanized surfaces)
M7.04.08	Enamel Undercoat Interior, Tints and White

M7.04.09 Paint, Outside, Dull-Black, (Formula 104)
M7.04.10 Primer, Pretreatment (Formula 117 for Metals)
M7.04.11 Paint, High Zinc Dust Content, Galvanizing Repair

M7.05 Epoxy Protective Coating.

M7.05.03 Epoxy - Polyamide Concrete Coating
M7.05.05 One Coat High Build Epoxy Mastic Coating
M7.05.11 Epoxy - Polyamide Primer Paint (non lead)
M7.05.12 Brown Epoxy - Polyamide Top Coat (non lead)
M7.05.13 Green Epoxy - Polyamide Top Coat (non lead)
M7.05.15 One Coat Hi Build Mastic Coating
M7.05.21 Coal Tar Epoxy Polyamide Paint
M7.05.31 Self-Priming Epoxy Coating
Or those coatings listed in the Department's Qualified Product Listing.

M7.10.0 Galvanized Coatings.

All galvanized coatings shall conform to the following general requirements:

ASTM A 143 – Safeguarding Against Embrittlement of Hot-Dip Galvanized Structural Steel Products and Procedure for Detecting Embrittlement.

ASTM A 384 – Safeguarding Against Warpage and Distortion during Hot-Dip Galvanizing of Steel Assemblies.

ASTM A 385 – Providing High-Quality Zinc Coatings (Hot-Dip).

AASHTO M 111 – Zinc (Hot-Galvanized) Coatings on Products Fabricated from Rolled, Pressed and Forged Steel Shapes, Plates, Bars, and Strip.

AASHTO M 232 – Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

The zinc used shall conform to AASHTO M 120 and shall be at least equal to the grade designated as "Prime Western." A range of 0.05% to 0.09% nickel (by mass) shall be added to the galvanized bath.

AASHTO M 298 Coating of Zinc mechanically deposited on iron or steel.